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ABSTRACT

Trends in higher education in Latin America and the Caribbean, educational goals, financing of universities, and future prospects are discussed. Attention is directed to the expansion of higher education, the relationship of expansion to the social structure and to democratization, access to higher education by women, access in relation to geographical location, enrollment in different courses of study, changes in the internal structure of higher education, open universities in Latin America, the link between education and work, and the role of scientific and technological research in the university structure. In the majority of countries in the region, a large number of pupils are excluded from primary school and the first part of secondary education. Higher education applicants come mainly from the middle and upper classes. However, social differentiation is less likely to be maintained during continued educational expansion in the context of a productive economy. The need to stimulate research and the role of the university in this process is an obvious task for higher education in the future. The most important experiments in open higher education systems are taking place in Venezuela, Mexico, and Costa Rica. (SW)

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TRENDS AND PROSPECTS IN THE DEVELOPMENT OF HIGHER EDUCATION IN LATIN AMERICA AND THE CARIBBEAN

Professor Juan Carlos Tedesco

ED-83/WS/75

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Note by the Secretariat

This study has been carried out as part of Unesco's programme of activities whose purpose is to analyse the role of higher education in society in greater depth. Within this context, a number of activities--this study for one--are essentially of an exploratory nature; they focus on certain fundamental problems and seek to promote reflexion that will lead to the clarification of the ultimate aims and future role of higher education on the basis of the results of past activities.

The Secretariat has undertaken a series of future-oriented studies on the development of education between the present time and the year 2000. They include five regional studies that examine developing trends in higher education, particularly in the universities, over the next twenty years, within the context of democratization and social transformation.

This paper forms part of these regional studies. It examines the trends and prospects in the development of higher education in Latin America and the Caribbean up to the turn of the century. Page by page the author gives us a considered analysis of the foreseeable evolution in the light of recently observed trends, of the goals and functions of higher education institutions--particularly the universities, and, at the same time, describes experiments currently being conducted in some of the region's universities.

The author bases his approach on analysis of the quantitative expansion of higher education and the way this relates to the social structure and democratization, and on consideration of institutional diversification and educational innovation. On the basis of these and other factors, he then examines the future prospects for the development of higher education in the region. The analysis shows how--as regards certain aspects--the dynamism of recent decades has failed to produce the results anticipated in many forecasts; unattained goals and new challenges sum up, for the author, the immediate future. After noting the various options open, he emphasizes the importance of a continued effort in the definition of the complex social function of higher education and of the ways of achieving its greater democratization.

Juan Carlos Tedesco, the author of this work, has a wealth of experience in research. This analysis reflects his knowledge of the subject, the result of his study and research into the development of education in general and of higher education in particular.

The author is responsible for the opinions expressed in this study which are not necessarily those of Unesco.

1. INTRODUCTION

Over the last few decades, higher education in Latin America and the Caribbean has undergone a series of exceptionally far-reaching changes. Quantitative expansion, organizational change, institutional diversification, the continued militancy of the student body and its position at the forefront of social conflict, educational innovation--these are some of the main features that have helped to transform the traditional Latin American university. Analysis of these factors and of the future prospects for development cannot be carried out without reference to the wider structural changes that have occurred in the region as a whole.

The links between education and the social structure have, over recent years, been interpreted in a variety of ways.

In short, there have been three major theoretical models at various points in time, reflecting the different ways in which the link between education and the structure of society has been viewed.

According to the first of these, covering the period from the end of the last century to the 1950s, higher education was defined as an agency for the training of a ruling élite, essentially in the political sphere. This model corresponds to a period when Latin American societies were predominantly agricultural, the State had few social functions, and participation in the running of the countries was confined to the upper classes. Higher education was concentrated in the universities and the bulk of teacher training was carried out at the secondary level (whereas now it is at the third level). This is what Jorge Graciarena has termed the stage of '<u>functional congruency and relevant association</u>', the political variable forming the linchpin in the relationship between university and society. A close relationship can be seen here between the professional sectors and political circles. 'Thus, access by university graduates to the highest échelons of state bureaucracy was easy, almost "natural", but not so their admission to the actual strongholds of social and political power. The holding of a university degree was no longer recognized as sufficient qualification for admission to the ranks of the governing élite, although it might be a necessary element of it. However, the extra something that could catapult a university graduate into a position of power in government could not be provided by the university alone. Other sources of support in the institutions of the establishment and in the class structure (family privilege) were vital, as was professed ideological loyalty to maintenance of the status quo (1)'.

One of the singular features of Latin America in this connection is the early assumption by the university student of an active political role. The student body was at the very heart of the struggle for the democratization of oligarchical rule through the elimination of the system of privilege that governed admission to, or renewal of the ruling élite, and the reform movement launched in Córdoba in 1918 was the most representative reflection of this conflict (2).

The second phase, from, roughly, the 1950s to the 1970s, is characterized by its association with the processes of modernization and development that occurred as part of industrialization through import-substitution. The university began to be viewed then as the fundamental agent in the training of the human resources that industry required. As a result, priority was given to switching courses and the teaching/learning processes over to science and technology. This was the background for a strong movement of criticism against the traditional university, levelled not only at its élitist nature and lack of relevance to production needs but also at its element of political dissent. Modernization appeared either as a way of discarding oligarchical traditionalism with its agricultural basis or as an alternative to the radicalization of the student body, which was converting the university into a breeding ground for political militants.

In this context, various attempts were made to introduce changes for a whole variety of reasons. Universities were set up with the obvious purpose of meeting the new requirements of the country's production system; efforts at modernization were made with the idea of removing the political element which were based, in theory, on technocratic models; while, lastly, integrated modernization schemes were introduced in response to the need to train personnel who would be capable, in scientific terms, of solving the problems of underdevelopment and dependence (3).

The third phase, corresponding to the last decade, can be said to be the period when the universities' role as innovators (at the political or the technical level) 'ran out of steam' and widespread scepticism emerged, stress being laid on the reproductive character of the education system as a whole, and of higher education in particular. Based in theory on the 'reproductivist' postulates of both French and North American origin, this line of reasoning emerged at the same time as the considerable quantitative expansion of higher education and a marked process of internal differentiation, which will be analysed later. However, it must be stressed that although these postulates succeeded to a certain extent in dominating educational thinking in the region, their very nature removed all possibility of drawing up a specific strategy for higher education.

While this process was evolving as regards theories concerning the university phenomenom (which were closely connected with prevailing ideological models in the most influential countries), the structure of society was rapidly being transformed. Here, the distinguishing feature of Latin America is, precisely, the dynamic pattern of its most important structural variables over the last few decades. Crucial processes have been taking place--urbanization, industrialization, expansion of the tertiary or services sector--all of which have deeply affected the make-up of current political life (4).

The extent of the urbanization process can be gauged from the fact that the percentage of the population dwelling in towns and cities has risen in the space of no more than 25 years, from 40 to 61 per cent. According to a recent study 'in seven countries in the region, urban population growth rates were greater than 5 per cent per annum, implying the doubling of the population in under 15 years. In nine countries, the urban population increased by between 4 and 5 per cent yearly. Only in the four most advanced countries in the process of demographic transition 'Argentina, Cuba, Chile and Uruguay) was the urban growth rate relatively slow. Although the region's urban population growth rate is now showing a clear downward trend (which will probably be maintained in the future), it is reckoned that towards the end of the century, the urban populations will make up over 76 per cent of the total (5)'.

This urban development, moreover, is set against the background of rapid population growth, two of whose main features raise the most serious challenges the region will have to face in the near future: the rise in the economically active population and the increase in the number of young people.

As far as the former aspect is concerned, estimates up to the turn of the century indicate that the EAP will increase from 99 million (1975) to practically 200 million in the year 2000. As for young people (15-24 age bracket), they numbered over 51 million in 1970 and their total is estimated to have risen to 71 million in 1980. This age-group reflects a high growth rate because it covers those born at a time when the drop in the mortality rate had not yet been matched by any decrease in natality.

Urbanization and the increasing proportion of young people in the population occurred in a context of a changing occupational situation in the production sector, sharply contrasting with the traditional processes of economic development. Industrialization, for example, was characterized by the introduction of advanced technology which, although guaranteeing high productivity, did not generate sufficient employment openings to match rising demand. Furthermore, Latin America's recent industrialization has considerably increased the heterogeneous character of production in each country. It can be seen that whilst modern industry uses only 15-30 per cent of the total manufacturing work-force it generates two-thirds of national industrial output. Recent industrial modernization has, to a large extent, been accompanied by a relative decline in the importance of national private enterprise in the face of expanding state and transnational undertakings. This particular feature of the industrialization process is of considerable significance in analysing the processes of technological innovation and the participation of local labour in them. This subject will be taken up again later, when the links between higher education and production are analyzed. For the time being, it should not be forgotten that the modernization of production has, in most countries, been accompanied by greater concentration in income distribution patterns which have accentuated the polarization of society. Those who are relegated to the fringe of the modern sector of the economy form what has come to be known as the 'informal sector' where, over and above any conceptual or statistical definition, the most striking aspect is that income is situated beneath the level at which anyone could reasonably be expected to subsist.

Urbanization coupled with late industrialization have accordingly been at the root of the expansion of the tertiary--particularly State-owned--sector. The growth of services of all kinds thus seems to have a wide array of causes: new needs arising out of urbanization, political response to growing social demands, forms of self-employment in order to 'scrape a living' and so on.

Yet the most significant result of the expansion of the tertiary sector has been the noticeable increase in 'middle class' employment category in the social structures of the countries in the region. This development has changed a good many of the traditional characteristics of these sectors (loss of independence and increased employment of a wage-earning type, greater diversity and internal differentiation, etc.) It is however, an extremely important factor from the standpoint of its political and educational implications and will be discussed further below.

Structural changes have been associated with a no less far-reaching political transformation of the region. This process over the last few decades, has meant a crisis for the oligarchical systems of government, but no other relatively stable forms of political organization have emerged that are capable of guaranteeing participation and consensus. Here the region shows a singularly varied range of changing situations: formal democratic systems, modernist military governments, populist governments, socialist revolutions, surviving oligarchies and lastly, authoritarian military régimes. Instability is, in many of these contexts the predominant feature.

One of the factors behind this instability is that the traditional oligarchical pattern of rule can no longer be reinstated in the context of the town-dwelling and increasingly educated population that exists today. The role of education, although it cannot be regarded in terms of an absolute guarantee of any particular social order, should no more readily be under-estimated or reduced to a merely reproductive role.

It is clear that within the context of changes of such profound significance as those that have been occurring in the region over recent decades, the role of education in general, and of higher education in particular has also undergone substantial change. In this respect, linear approaches that envisage only one possible way forward are to be avoided. Disruption of the traditional balance has plunged the university and education as a whole into crisis, the most obvious illustration of which is the growing diversity of models, types of establishment and national situations.

The fluidity of the situation is highly significant and the challenges the countries in the region are--and will be--facing in the coming decades are crucial as regards the decisions to be taken on the role of education and its contribution to overall progress. In this respect, Latin America and the Caribbean form a region where future research is fraught with difficulty. Political instability, extreme vulnerability to changes in the main economic and political centres of the world, and the international economic crisis are sufficient to discourage any claim to certainty in analysing probable trends. However, the immediate future is, in some respects, already upon us and, even in this context of uncertainty, any attempt to forecast future developments will at least serve as a basis for discussing what would be desirable.

2. THE EXPANSION OF HIGHER EDUCATION

In Latin America the university has traditionally been a theme of broad and varied debate; ever since the historical process of reform begun in 1918 in Córdoba, the vicissitudes of university life have become a subject of constant analysis and controversy. In the last instance, this intense debate has mirrored the almost chronic state of imbalance brought about by the difficulty in matching the dynamics of the university with the changing requirements of society. However, although the debate has been unending, its terms and the categories used have gradually been changing according to the dimensions of the analysis and the problems that have arisen with each fresh set of circumstances. Participation in the governing of the universities, academic organization, the problems of the student movement, university involvement in national political life, its contribution to economic development, research, curriculum development, and so on, have each, at one point or another, been the dominant theme of this debate. In defining the current terms of the university debate, it is doubtful if any of the above issues could be left out, basically because none of them has yet found a permanent solution. Nevertheless, the aspect which marks the difference between the present university situation and those that have gone before--and which now provides the background for discussion of all the problems involved--is the 'massification' of higher education.

The growth in university coverage has, over the last three decades, been more rapid than that of any other level of education.

Today, the status of university students is one shared by millions of young people. In 1950 there were only 266,000 students in the region as a whole; thirty years later, this figure had risen to 5,383,000. In relation to the population in the 18-23 age-group, the figures indicate that whereas in 1950 only 2.5 per cent of young people gained access to the university, by 1980 the percentage had risen to 11.1 per cent.(6)

Obviously, the regional averages mask considerable disparities from country to country. A recent study(7) based on information concerning the number of higher education students in the 20-24 age-group shows the changing situation over the last three decades and indicates some of the specific features in some individual countries.

According to the figures provided in that study, the regional situation in 1950 showed that even in those countries with the greatest enrolment in higher education, gross enrolment ratios were only just over 4 per cent. In most countries in the region, ratios were even lower, indicating a clearly élitist situation in higher education. Thirty years later, however, it is possible to see the considerable increase that has occurred in higher education enrolments. Now the maximum ratios recorded in 1950 have been exceeded in practically every country.

The 1980 figures show that the lowest ratios lie between 5 and 13 per cent; in the next group of countries ratios lie between 13 and 20 per cent while in the third group the figure is over 20 per cent. In this third group--according to the survey--are five countries, of which only two were in the highest group in 1970 (Argentina and Venezuela); now they are joined by Panama and Ecuador, which have been gradually moving up over the last three decades, with one specific feature in the case of Ecuador, inasmuch as between 1971-1972 and 1977-1978 the annual growth rate in university enrolment was 28 per cent. Lastly, in Cuba--which in 1950 had been in the highest category and had dropped to the lowest position in 1970--priority has once again between placed on higher education and in ten years the GUER (Gross University Enrolment Ratio) has risen from under 5 to over 20 per cent. The most important factors behind this leap forward are the strengthening and universalization of secondary education which provides the university with a considerable flow of students, and the introduction of arrangements to enable working men and women to follow higher education courses.

TABLE 1

Latin America: breakdown of countries by gross university enrolment ratio (GUER) 1950, 1970, 1980

1950 GUER below 2%		1970 GUER below 5%		1980 GUER below 13%	
Chile[a]	(1.7)	Colombia	(4.7)	Bolivia	(12.8)
Venezuela	(1.7)	Paraguay	(4.3)	Mexico	(11.8)
Mexico	(1.5)	Cuba	(3.7)	El Salvador	(11.6)
Ecuador	(1.5)	Guatemala	(3.4)	Chile[b]	(11.4)
Paraguay	(1.4)	El Salvador	(3.3)	Colombia	(10.6)
Dominican Republic	(1.1)	Honduras	(2.3)	Paraguay	(10.1)
Brazil	(1.0)	Haiti	(0.7)	Honduras	(8.3)
Colombia	(1.0)			Guatemala	(5.7)
Guatemala	(0.8)			Haiti	(0.7)
El Salvador	(0.6)				
Honduras	(0.6)				
Nicaragua	(0.6)				
Haiti	(0.3)				
GUER 2-4%		**GUER 5-10%**		**GUER 13-20%**	
Peru	(2.4)	Uruguay	(10.0)	Costa Rica	(20.0)
Panama	(2.2)	Bolivia	(10.0)	Peru	(17.9)
Bolivia	(2.0)	Chile	(9.4)	Brazil	(16.8)
Costa Rica	(2.0)	Ecuador	(7.9)	Uruguay	(15.5)
		Panama	(7.2)	Dominican Rep.	(15.0)
		Dominican Rep.	(6.5)	Nicaragua	(13.8)
		Mexico	(6.1)		
		Nicaragua	(5.7)		
		Brazil	(5.3)		
GUER 4-6%		**GUER over 10%**		**GUER over 20%**	
Uruguay[a]	(6.0)	Argentina	(14.2)	Cuba	(27.6)
Argentina	(5.2)	Venezuela	(11.6)	Ecuador[b]	(26.7)
Cuba[a]	(4.2)	Peru	(11.1)	Panama	(23.4)
		Costa Rica	(10.6)	Venezuela[b]	(23.4)
				Argentina[b]	(21.2)

Source: DEALC, op. cit., Table VIII.4

(a) For Cuba: 1952; for Chile: 1949; for Uruguay: 1951.
(b) For Argentina: 1979; for Chile: 1979; for Ecuador: 1978.

In the middle range there is no significant change apart from those already mentioned in connection with the advance of Costa Rica and Cuba to the highest category and their subsequent dropping back. The presence of Brazil in this position sets the average for the regional GUER because of the weight of that country's student population in Latin America as a whole.

As far as the lower range is concerned, the three central American states remain, as do Paraguay and Colombia, and they are joined by Bolivia and Mexico. In the case of Bolivia, the GUER has previously failed to keep up with the pace of the rise in the region as a whole, as a result, among other things, of the stagnation in secondary education. A similar situation would seem to obtain in Mexico with the additional factor that in the most recent years, priorities seem to have been directed towards basic education, particularly for the sizeable rural population still to be found in that country, and whose opportunities for continuing studies beyond the primary school are still limited, as they are in Colombia (8).

The comparison given in the above table does not include certain Caribbean countries because there are no comparable data. Nevertheless, the available evidence points to a process that follows the broad trends outlined here. In no more than six years (1970-1976) the gross university enrolment ratio rose from 4.2 to 4.9 per cent in Jamaica, from 2.9 to 6.5 in Barbados, from 1.5 to 4.3 in Guyana, from 0.0 to 1.5 in Suriname and from 2.2 to 3.8 in Trinidad and Tobago (9).

This marked expansion of higher education in quantitative terms, characteristic, despite specific national features of the entire region, opens up a whole range of questions that need to be dealt with analytically--factors explaining this quantitative expansion, social sectors which have benefited from it, the courses to which the new sectors admitted to higher education are being guided, the consequences of expansion on the quality of education and on the internal structure of the university, the consequences of expansion on the relationship between higher education and the social structure (employment market, political participation, economic growth, etc.) are just some of the questions on which the discussion below will hinge.

2.1 Quantitative expansion and the social structure

As a general hypothesis concerning the quantitative expansion of higher education, it can be said that it has not been the result of any policy specifically designed for this purpose, but the outcome of a particular process in which factors to do with economic growth and the power structure have all played a part, as has the prevailing ideology of the various social strata involved in such processes.

Until fairly recently, when there was a predominantly economic approach to education, educational expansion tended to be interpreted as a variable associated with the structure indicators of economic development. Recent studies, however, show that the problem is singularly more complicated than was supposed. For example, correlation of the indicators of urbanization, gross domestic product, illiteracy and university expansion shows that only in the extreme cases does the association behave as expected. Argentina and Venezuela, for example, have the highest gross domestic product, urbanization and university expansion figures. At the other end of the scale, Honduras and Haiti represent the reverse situation. However, between the two extremes there is a variety of situations in which no definite correlation pattern between structural variables and university enrolment is reflected.

In short, analysis of the behaviour of the structural indicators shows that there is a considerable range of possible situations which affect the pattern of education when the relevant indices are very low. When the reverse is the case, however, there is no one single pattern and the development of higher education seems to hinge on a complex set of variables, foremost amongst which are political decisions and the correlation of social forces--particularly the importance of the middle classes, and the nature of any state-supported cultural projects (10).

One indication of the political and social character of higher education expansion is provided by the data available on the expansion of the education system as a whole. It can be maintained that the expansion of higher education is relatively independent of that of basic education. Only very few countries in the region (Argentina, Cuba, Uruguay, Costa Rica, Chile and certain Caribbean countries such as Barbados, Jamaica, Grenada, Guyana, and Trinidad and Tobago) can show a growth movement in higher education that has gone hand in hand with the eradication of illiteracy. In the remaining countries, there are clear indications of polarization, a fringe of the population having access to all the stages of education offered by the system, while vast sectors are completely excluded.

Here, the importance of the link between the social demand for education and the response of governments in meeting this must be emphasized in any explanation concerning the quantitative expansion of higher education. A number of studies carried out in the region have highlighted the fact that the expansion of post-primary education is chiefly due to the greater capacity of the urban middle-class sectors to express and press home their demands.

These sectors tend to call for increasing access to the education system and for a longer period of study within it for reasons that are closely linked with the dynamics of social stratification and differentiation. In this respect, it can be said that transformations in the production sector (increasing transfer of employment opportunities to the tertiary sector, industrialization with technological fragmentation, etc.) have affected both the possibilities of social mobility open to the middle classes and the channels involved. In other words, educational expansion is not produced simply or mainly (as the economists would have us think) because of the technical requirements of the production apparatus, but as a result of the social consequences of the production changes. As stated in a study on educational expansion in recent decades: '....the growth of education--particularly its make-up by levels--is being determined by the structure of production; this, however, is not because of a greater demand for more highly skilled labour, as the manpower approach might suggest, but precisely because of the lack of flexibility of the economic dimension, which turns the educational system, in practice, into the only, or at least the most accessible, channel for social mobility'(11).

At the same time the state tends to respond more readily to educational demands than to others. There is, for instance, obviously far more resistance to meeting demands for improved income distribution or greater political participation than demands for education.

The reasons for and the consequences of this pattern of differentiation go beyond the scope and purposes of this study. However, it is important to bear this aspect of the problem in mind in order to understand the reasons why the relationship between higher education and the social structure is tending more and more towards imbalance rather than equilibrium. This imbalance lies at the root of the redefinition of the mechanisms of social differentiation or, at least of the role of education in the processes of social differentiation and stratification.

2.2 Quantitative expansion and democratization

2.2.1 Access by new sectors of society

The increase in enrolment has frequently been referred to as 'massification', this inevitably gives the impression of greater democratization since it conveys the idea that access is being provided to those sectors of society traditionally excluded from this level of education. Literature on the subject is extremely non-committal in this respect. In fact, there is a regrettable lack of precise

information about the particular social sectors that have actually benefited from the growth of higher education. Studies are few and far between and incomplete, a topic of analysis in itself. It is paradoxical that, in the context of such a higher education enrolment 'explosion' there should have been so little systematic research concerning the particular sectors that have gained access to this level.

The ambiguity of the question arises from two main factors: on the one hand, quantitative growth of the scale recorded over the last three decades cannot be accounted for unless it is granted that sectors that were previously excluded have now gained access. On the other hand, however, the facts show clearly that access is concentrated amongst the middle and upper classes and that in Latin America--as long as the objective of universal basic education is not attained--it is impossible to talk about any real democratization of higher education.

In order to clarify this aspect of the problem as fully as possible, it may be useful to sum up the findings of recent studies on the social origins of university students carried out in two countries in which education has developed along different lines: Argentina and Venezuela (12).

In both cases, obviously, the representation in universities of the lower middle and lower classes is considerably less than the proportion they represent of the economically active population as a whole. In both cases, then, the university is clearly a place for the middle and upper classes of society.

However, the peculiarity in the case of Argentina is found in the crystalization of the share of each social sector in total university enrolment. As one report puts it: '...the rise in student numbers has been strictly in proportion to the positions already held by each sector and access possibilities reflect greater discrimination in regard to socio-occupational situation than the level of instruction (13)'.

In the case of Venezuela, on the other hand, the process of social mobility during the last few decades has been very marked. Yet analysis of available information points to the fact that considerable polarization is taking place between those who manage to clear the hurdle of primary education and, hence, have access to non-manual employment and post-primary studies, and those who fail to surmount it and remain in a state of semi-illiteracy.

The two cases have given rise to different structures in terms of educational democratization. In the first, greater homogeneity is to be found; in the second, marked segmentalization. Nevertheless, the Argentine case demonstrates the fact that although the democratization of basic education is a prerequisite for that of higher education, it is not sufficient per se.

A different way of analysing the question of democratization in higher education is to study the ultimate occupational classification of university graduates.

Several highly important facts in this respect are revealed in a recent study on social stratification in Latin America (14), first and foremost the considerable expansion of the middle classes in all countries in the region.

The figures in Table 2 speak for themselves: despite the internal heterogeneity of the middle classes, growth has been considerable. On this basis it can be maintained that although access to higher education is concentrated amongst the middle and upper strata of society, it is nevertheless a relatively new thing for many people to belong to these classes.

TABLE 2

Middle and upper strata in a selected group of countries in Latin America

(in percentage)

Country	1950	1960	1970
Argentina	35.9	36.6	38.2
Bolivia	-	-	-
Brazil	15.2	15.3	18.6
Colombia	21.9	23.6	26.8
Costa Rica	22.3	22.1	24.1
Chile	21.4	22.1	29.0
Dominican Republic	-	13.6	18.2
Ecuador	10.5	15.0	18.7
El Salvador	10.5	12.2	13.6
Guatemala	7.7	12.3	11.8
Honduras	5.1	10.9	20.6
Mexico	-	21.1	24.4
Nicaragua	-	14.7	19.2
Panama	15.2	20.4	23.4
Paraguay	14.2	14.3	15.7
Peru	-	18.1	23.2
Uruguay	-	35.8	35.0
Venezuela	18.2	24.8	31.3

Source: Lipset y Bendix, Movilidad social en la sociedad industrial. Eudeba, Buenos Aires, 1962, and data from Census Samples (CELADE Programme), Santiago de Chile. Filgueira-Geneletti, op.cit.

TABLE 3

Secondary and higher education, middle and upper strata, and education by occupation 1960-1970*

Country	1960			1970		
	Middle and lower strata	Secondary and higher education	Middle and upper strata with secondary and higher education	Middle and higher strata	Secondary and higher education	Middle and upper strata with secondary and higher education
Argentina	3.4	18.7	13.5	32.2	26.5	20.0
Brazil	14.5	8.1	6.0	-	-	-
Costa Rica	21.5	13.0	10.3	22.9	20.9	14.3
Chile	19.6	24.6	13.6	25.2	30.3	19.0
Dominican Republic	11.0	9.3	5.6	11.9	13.8	6.9
Ecuador	12.2	9.3	5.4	-	-	-
El Salvador	10.9	6.0	4.4	11.7	8.0	5.2
Guatemala	9.0	5.0	4.3	10.9	7.4	5.4
Honduras	9.6	4.7	3.7	-	-	-
Mexico	19.9	8.3	6.1	22.4	13.0	8.5
Nicaragua	-	-	-	15.7	10.1	6.8
Panama	16.4	22.1	11.5	21.8	27.3	15.8
Paraguay	11.8	10.7	6.5	13.8	15.8	8.8
Uruguay	30.7	21.7	14.3	-	-	-

* Primary data, without adjustment for the 'no information' category.

Source: Filgueira-Geneletti, op.cit.

The 'other side of the coin' as regards this phenomenon--heralded by the decline in the processes of social mobility in the recent decades--is that education would appear to have expanded faster than the capacity of the structure to absorb all those who have benefited from education.

'In all countries between 1960 and 1970'--according to the authors of the study--'there has been an increase in the proportion of educated people who have not gained access to middle-class positions. Increasingly, the middle and upper classes are recording a higher share of educated people within their midst; even there, however, the percentage of those who fail to gain access to employment suited to their station is constantly on the increase (15)'.

The facts brought to light here indicate the main features that have given the process in Latin America its particular character: at the outset, a strong current of social mobility in which formal education played an important role as a mechanism for access to middle-class status; at a subsequent stage, dwindling mobility in relation to the length of study, with the consequent need to adopt a new approach to the processes governing mobility and to the role of education within them. We shall be returning to this subject later, but for the time being it should be noted that the role of education as a factor in social differentiation is changing.

The signs would all seem to point to the fact that as access to education broadens, the factors involved in differentiation shift to the employment market.

2.2.2 Access by women

The increasing number of women students in higher education in Latin America and the Caribbean has without the slightest doubt, been one of the factors that accounts for a significant part of the rise in numbers recorded over the last three decades. Whereas in 1950, female participation in total higher education enrolment exceeded 40 per cent in only two countries, Cuba and Panama, in 1980, Argentina (49.0 per cent), Brazil (48.0 per cent), Costa Rica (45.0 per cent), Chile (44.0 per cent), Panama (52.0 per cent), Paraquay (41.0 per cent), Dominican Republic (47.0 per cent), Uruguay (42.0 per cent) and Venezuela (47.0 per cent) had all joined this category; in the remaining countries the figure varied from 30 to 40 per cent (16). Information on Caribbean countries shows that towards 1976, figures for female participation in total enrolment figures in higher education in Barbados, Jamaica, Guyana, Suriname and Trinidad and Tobago ranged from 45 to 50 per cent.

This process is linked with the changes in the social role of the women, particularly the fact that women from the middle classes have entered the employment market. The fields of study to which women have turned in higher education have been mainly education, the humanities and the social sciences. The problem of the composition of higher education enrolment by field of study will be analysed further below in greater detail; at the present juncture it should be stressed that female enrolment is not spread among all the courses open to women in higher education in a uniform manner, but is heavily concentrated in certain areas which, from the point of view of career prestige, tend to represent the lower end of the scale.

This trend can be seen to be even more marked when we observe that in addition to the concentration of women by field or course of study, there is also a concentration of women students in the newly created institutions in the provinces and regions. It has been shown that numbers of women students in provincial universities tend to be higher than the national average (17).

The democratization of higher education from the standpoint of access by women is another example of the fact that the processes of differentiation are shifting from the education system to the social structure. In recent years, a number of studies have emphasized how sexual discrimination operates fundamentally in the employment market. The inference to be drawn from the information available on the subject is that, for similar posts, women must have studied for a longer period than their male counterparts. Similarly, methods of recruitment, promotion and remuneration appear to reflect norms which, although not explicitly stated, discriminate against women. It is important not to overlook the fact--and this point must be stressed--that as far as sexual discrimination is concerned, education is gradually losing its role of differentiator. Since there is increasing homogeneity as regards the supply of labour, discrimination comes into play almost exclusively at the level of the employment market. In this form, discrimination reveals its arbitrary character more clearly, because it loses the 'legitimacy' traditionally conferred upon it by differences in education.

2.2.3 Access in relation to geographical location

Another important aspect linked with the democratization of higher education concerns the location of the educational establishments. Serious attempts have been made in recent years, as we know, to bring about decentralization by setting up third-level institutions in provincial capitals or other large cities. The factors behind this process are many and varied. First, there has been the growing demand from the middle-class sectors for the local establishment of universities so that students do not have to leave their home regions. Secondly, regional development policies have been emerging as has the need to train human resources in response to regional needs; and lastly, there has been a movement to cut back the size of the major national universities, on account of educational and administrative management problems and the political difficulties stemming from the heavy concentration of students (18).

There is no accurate assessment of the real impact of the regional decentralization of higher education. On the basis of certain partial data, however, a number of comments and working assumptions can be formulated.

As regards the impact on the external democratization of the university, reference has already been made to the trend towards greater female enrolment in regional institutions. However, from the social standpoint, the impact would seem to be much less marked since--as a study on the subject maintains--'because of the pattern of society in Latin America, regions that are not metropolitan or do not constitute focal points of development have a greater proportion of marginalized or low-income groups among their population totals, which means a narrower basis for university recruitment (19)'.

As for the response to local production requirements, no overall assessment of the situation exists either. A study of the Regional University Centres (CRU) in Panama (20) shows, for example, that these centres simply provide the same education offered by the central units, and courses reflect no specific response to regional manpower requirements. It would seem that the CRU courses are governed more by the question of the universities' capacity to provide them than local needs. The Panama data show, then, that the CRU Centres have only partially succeeded in overcoming the problem of keeping students in their home areas and relieving some of the congestion in the central campus. The study referred to (data for 1975 and 1976) shows that provincial students enrolled in the central campus chose the same courses as those available in the CRU. This underlines the fact that the greater academic prestige of the central campus and better employment opportunities in the capital cities are crucial factors in determining the distribution of enrolment.

At the same time, it should be pointed out that the low level of development of the non-metropolitan areas has produced a situation in which the demand for labour is more theoretical than real. Although needs in these areas are obviously great, the fact that there is no effective application of integrated development schemes means that they are not translated into specific demands.

2.3 Quantitative expansion and enrolment breakdown by course of study

The changes in enrolment by field of study over the last few decades are a valuable indicator of the courses towards which the increased number of students has been channelled. Available data show that in general terms, and as far as the breakdown of enrolment is concerned, higher education in Latin America is no longer focused on law and medicine but has turned to the social sciences, the humanities and sciences of education.

Table 4 shows, on the basis of enrolment figures for the last three decades, the fields of study which, in 1950 and 1975, occupied first and second place as regards numbers of students enrolled. Although the situation varies from country to country, the predominance of the humanities can be seen to be very marked.

The signficance of these changes should not, however, be interpreted without due consideration. Critical analyses based on the economic approach to education have given currency to the idea that a concentration of students in humanities courses is a sign of traditionalism and the failure of the educational system adequately to respond to production requirements and the development process. To a certain extent the argument is valid. However a more far-reaching analysis must be made to explain the full import of the changes in enrolment distribution.

In the first place, as we saw in the first part of this study, in employment-market terms, requirements have shifted basically towards the tertiary sector. Here, the transfer of teacher training to the higher education level and the expansion of services--in both the public and private sectors--is of prime importance. The predominance of the humanities no longer has the same significance as it had in the past when law was the main subject, for the courses that are now the most important are those that relate to specific areas of activity: teaching, public administration, social services and so forth. From this standpoint, the expansion of education and humanities studies has gone hand-in-hand with the growth of the services sector. Obviously, it could be maintained that this is irrational and distorted growth. But if overall development patterns do not change, the alternative solution of directing higher education primarily towards scientific and technical careers would inevitably be accompanied by a restrictive policy on access to education, for employment openings in these areas are very limited.

In the second place, it should be borne in mind--and this will be seen later--that there has been a trend in higher education towards internal differentiation. Many higher education courses, particularly in relation to teacher training, are provided outside the university. Unfortunately, no complete data are available to allow us to identify enrolment by type of course (21).

Thirdly, increasing female participation in enrolment has had a decisive influence on study trends; women may well have considerably increased their share of total enrolment, but this is concentrated in the humanities and education (22).

TABLE 4

Latin America: areas of study by enrolment numbers, circa 1950 and 1975

Country	Circa 1950		Circa 1975	
	1st pos$^{n.}$	2nd pos$^{n.}$	1st pos$^{n.}$	2nd pos$^{n.}$
Argentina	Medicine	Law	Social sciences	Medicine
Bolivia	-	-	Education	Social sciences
Brazil	Law	Medicine	Social sciences	Humanities
Chile	Education	Medicine	Education	Engineering
Colombia	Medicine	Law	Social sciences	Education
Costa Rica (1961)	Humanities	Social sciences	Humanities and teaching	Education
Cuba (1961)	Social sciences	Medicine	Engineering	Education
Dominican Republic(a)	Medicine	Law	Medicine	Social sciences
Ecuador (1960)	Medicine	Engineering	Humanities	Social sciences
Guatemala	Medicine	Law	Social sciences	Medicine
El Salvador	Medicine	Law and social sciences	Social sciences	Medicine
Honduras	Medicine	Engineering	Social sciences	Engineering
Mexico (1961)	Social sciences	Engineering	Social sciences	Medicine
Nicaragua (1962)	Medicine	Social sciences	Humanities	Social sciences
Panama	Law	Humanities and education	Social sciences	Medicine
Paraguay	Medicine	Law	Law	Social sciences
Peru	Natural sciences	Social sciences	Social sciences	Engineering
Uruguay (1960)	Law	Medicine	Medicine	Law
Venezuela(a)	Medicine	Natural sciences	Social sciences	Engineering

(a) In the Dominican Republic and Venezuela no particular area of study is specified in the case of 38.2 per cent and 27.0 per cent respectively of the total enrolment.

Source: DEALC, op. cit. Table VIII, 12.

The trends in enrolment are reflected, with only slight differences, in the flow of graduates from higher education. In this respect, the analyses concur in signalling the inefficiency of Latin American higher education. The percentage of students who fail to complete their course is high, as at the other levels of the system, the most drastic 'weeding out' taking place during the first year. A survey on the UNAM in Mexico (23), for example, showed that between 1955 and 1975, the average number of drop-outs represented about 41 per cent of the total enrolment. However, when the overall figures are broken down into five-year periods, a gradual improvement can be noted in the university's quantitative efficiency. As regards the stage when dropping-out begins, the study reveals that it can start as early as the period between enrolment and the beginning of term, the greatest number of drop-outs being recorded during the first semester. This situation can be said to obtain, with only slight differences, in the other countries in the region (24);

Studies on the employment of students who have dropped out or failed to complete their course successfully suggest that in actual fact the situation cannot be qualified as completely inefficient or wasteful. It was shown in Argentina, for instance, that a greater number of students who had dropped out of university preferred to take up employment in industry than those who had graduated (25). Another survey concerning Uruguay showed that certain employment factors discouraged students from finishing courses, either because there was not a big enough difference in salary, or because, in practice, promotion depended on experience and length of service with a particular firm rather than on the holding of a degree (26).

Nevertheless, two observations are necessary here. First, these are countries with a relatively diversified production structure and a varied range of technology because of their early industrialization, where those without complete training can be absorbed into the production sector and their lack of training offset by actual job experience. Secondly, the surveys referred to are based on data that go back over ten years. The situation has probably changed today because of the larger supply of graduates and the growing inflexibility of the employment market.

3. THE FINANCING OF HIGHER EDUCATION

The overall financial effort devoted to education has varied very considerably in recent decades. Analysis of educational expenditure as a percentage of the GNP shows that between 1970 and 1976 the average figure for Latin America as a whole rose from 3.3 to 3.4 per cent. However, the rate varied considerably from country to country: in four countries it was under 2 per cent, in 16 countries over 4 per cent and stood at 7 per cent in three countries. Furthermore, in thirteen countries educational expenditure had decreased between 1970 and 1976, while in fifteen other countries it had increased (27).

The internal distribution of the education budget shows that higher education has considerably increased its share, to a large extent independently of the volume of student enrolment. According to the OREALC report at the last Conference of Ministers, '...the share of current expenditure assigned to higher education reaches surprising levels at times. Many countries now assign more than 20 per cent of their regular education budgets to this level of education. This is all the more surprising in view of the fact that higher education enrolment ratios in these same countries vary very greatly--between 1 and 23 per cent (28).

Side by side with these results of financing policy, a very important change has come about in recent years in the terms in which the financing problem is analysed. Until fairly recently, educational expenditure was generally considered in terms of investment and was therefore amply justified from the standpoint of official policy and individual decisions. Now, on the other hand, such justification has begun to be challenged in a number of theoretical approaches and also as a result of the constraints imposed by the international financial crisis.

In the first place, the basic validity of the 'investment' aspect of education expenditure is being challenged. The underemployment of educated people, the discounting of the length of study in the employment market, the concentration of enrolment and employment opportunities in sectors that are not directly productive, etc., are some of the points raised in order to modify the idea that educational expenditure of any kind represents an investment from the standpoint of society and the individual.

In the second place, the economic crisis is fuelling the argument that it is increasingly difficult to justify greater allocations to education, particularly higher education, and that ways must be found of cutting the cost of the educational services or of transferring the burden to students or their families (29).

In the third place, reference is made to two important aspects of this issue: who is paying for education and who is receiving it, and how should the higher education budget be spent?

In regard to the first question, studies on the subject show that in the case of higher education there is a net transfer from the poor and the very rich to the upper middle classes. According to these surveys, in primary education, there is a transfer from the wealthiest social group (13 per cent) to the poorest (87 per cent) whereas in secondary education, the transfer is from the 40 per cent poorest and 13 per cent wealthiest to the lower middle-class urban sector. As far as higher education is concerned, on the other hand, there is a net transfer from the poor and the very rich to the upper middle classes. Thus, a considerable portion of the subsidies for higher education benefits only the quintile corresponding to the highest-income group. This situation can be said to apply to many countries in the region and raises serious doubts as to the social equity of the financing system (30).

With respect to the second aspect, there is no precise information available to demonstrate the argument although certain estimates reveal that the use of higher education resources is particularly inefficient, allocations being concentrated on either certain budget items (basically salaries) or certain regions (most highly developed urban centres).

Two important observations need to be made in the light of this situation. First, the question of financing must be placed within the general context of policy decisions and the social conflict that surrounds the assignment of surplus budget funds: it is not, basically, a technical problem. In this context, one may legitimately question certain assumptions underlying the gloomy forecasts on the future of education financing. Indeed, there would seem to be greater justification for querying the wisdom of increasing military expenditure than that of increasing the education budget. In other words, the allocation of resources to the various sectors and, within these various sectors, the internal use of such resources, are governed by the same parameters as those that apply to the distribution of property and income in society as a whole.

Secondly, it must be realized--and thus observation complements the first--that the political nature of the financial decisions taken is no reason for not making serious attempts to rationalize the use of resources from the educational standpoint, and to devise funding arrangements that will meet the objectives of social equity, increased efficiency and a reduction in public expenditure. What is called for here is analysis and assessment of some of the experiments proposed or put into effect in various countries in the region recently, the results of which have not yet been made known: tax measures of various kinds, education credits, charges for services provided, etc.

4. STATE UNIVERSITIES AND PRIVATE UNIVERSITIES

The debate on the financing of higher education and on its internal differentiation makes constant reference to the distinction between the public and the private institution. It has generally been maintained that the difference between the two types of establishment referred essentially to the source of financing and that, as a result, the social base for recruitment differed as well, since the privately funded establishments tended to attract more students from the upper sectors of society than the public universities.

In recent years, however, the situation has become considerably more complex. Although no reliable overall data are available, it would seem plausible to argue that a significant proportion of the rise in enrolment has occurred in the private sector. Certain estimates suggest that between 1960 and 1970 enrolment in that sector rose from 11 to 23 per cent in the region as a whole. The problem is that it is becoming increasingly difficult to make a clear distinction between the two sectors. Levy (31) recently produced a number of facts which show that the traditional criteria used to 'draw the line' between the two have become blurred. In regard to financing, for example, it has to be pointed out that certain public universities are gradually applying scales of fees at the same time as--conversely--the State is beginning to subsidize a number of private institutions.

From the point of view of State control, Latin America has a long and valuable tradition of public universities that enjoy a considerable degree of independence vis-à-vis the State, while in certain countries, private universities are strictly supervised either by the State or by their administrative bodies.

Finally, in regard to objectives and functions, differences have, here again, become blurred. The State has promoted the setting-up of new types of universities designed to meet the needs of particular sectors of society or of industry, while certain private establishments can no longer be distinguished from State institutions in this respect.

Analysis of national cases reveals a broad spectrum of situations. In Brazil, for example, private establishments account for a very high proportion of enrolment but the important fact is that it is the public universities that attract the 'cream', boasting a prestige and a reputation for quality far greater than the others. In Chile, on the other hand, there is little difference between the public and the private sector, whatever the standpoint adopted. In Mexico, the difference is considerable and a marked distinction is apparently becoming established as regards the function of the university: State establishments are training the political élite while the private institutions are producing the economists. In Venezuela, a very considerable difference also exists, although the State is now encouraging policies that closely resemble those of the traditional private-funded universities.

While there can be no doubt that a more detailed and far-reaching investigation is necessary, these facts show that the process of internal differentiation and stratification in higher education establishments has become very much more complex in recent years. Each country seems to be adopting its own individual pattern in line with its history and the initiatives taken by the main social actors. Although the difference between the public and the private establishment no longer constitutes the key factor in the internal differences in higher education, the process of internal differentiation provides, nevertheless, the key to our understanding of how the educational structure has responded to the challenge of maintaining its function in the social differentiation process within a context of such considerable quantitative expansion.

5. INTERNAL DIFFERENTIATION IN HIGHER EDUCATION AND RECENT INNOVATIONS

The quantitative expansion referred to in previous chapters has given rise to important changes in the internal structure of higher education. We should first of all examine the question of whether this expansion has or has not modified the traditional monopoly enjoyed by the university at this level as a higher education institution. It is a well known fact that one of the distinctive features of Latin America has, indeed, been the identification of higher education with the university--the contrary of what has been occurring in other regions, where the difference is very marked (32).

Available data on the subject reveal a variety of situations. In some countries, the trend continues to be one of concentrating higher education in the universities. Almost 90 per cent of higher education enrolment in Venezuela, for example, is concentrated in the universities, despite the creation of polytechnic and teacher-training university institutes. Similar trends are to be observed in Panama. Brazil, on the other hand, shows another pattern, with a clear polarization between the universities and the so-called 'isolated institutions'. The expansion of these institutions has been considerable and latest data show that enrolment is now greater than in the universities. In Argentina, because of the restrictive policies on university admission put into effect over recent years, there has also been a rapid expansion of the non-university higher education sector. In 1970, 86 per cent of higher education students were enrolled at university; in 1981, the figure had dropped to 76.5 per cent.

These different national situations are however, marked by a common trend, over and above any distinction between university and non-university establishments. It is the growing internal difference in higher education reflected in the existence of establishments whose resources and reputation vary considerably, and which are producing a type of education marked by heavy internal segmentation and stratification.

From this standpoint, the problem today lies in the fact that differentiation has to do not only with the number of years of study or the holding of a degree, but also with the particular institution where the studies were carried out and where the diploma was obtained.

The chief variable in the process of internal differentiation between the institutions of higher education seems to be the social origin of the students. Research in this area suggests that there is an increasingly important link between social origin, admission to a particular type of establishment and future occupation (33).

What is important to ascertain from the educational standpoint, therefore, is what happens inside the institutions, how is internal differentiation reflected in terms of curriculum and organization, available resources, and so on--in other words, what is the specifically educational contribution to the role of higher education in internal differentiation.

In this respect, critical analysis of the traditional university was basically uniform in that it referred to a small number of establishments which monopolized the entire higher education sector. In its general lines this analysis indicated the following:

> The university is, by its very structure, an antidemocratic and costly institution. It is materially impossible to democratize the university by maintaining its present system of operation unchanged, since admission demands an urban dwelling, formal educational requirements, etc.

From the educational standpoint, the university is guided by the criteria of academicism, book knowledge and verbalism; it is far removed from social needs, particularly those of the production sector, as reflected in the low status it assigns to manual work and all things practical.

Knowledge is conceived of in fractions, as is clear from the internal organization of the university. The key element is the professional system, in which each subject is regarded as a kind of feudal domain separate from the rest. Furthermore, the educational aspect predominates, and there is insufficient provision in the organization of the universities for other functions such as research, guidance, etc.

Despite the focus on the educational aspect, the importance of the teaching process is under-estimated, as is the training of university teaching staff, since the uniformity of the social origin of the university population and the élitist nature of the institution mean that the problem of low achievement is not regarded as one that needs to be tackled.

These aspects among others, have been the subject of innovation and proposals for change over recent years; these should be considered briefly before a final assessment can be made of future prospects in this field.

These innovations have mostly been promoted in the framework provided by the traditional universities. Thus, much of the modernizing drive has been channelled into the setting up of new institutions, giving rise to institutional differences and to a further problem: the links between the two types. In the initial phases of the modernization process, however, it could be seen that the new institutions were increasingly imitating the traditional establishments and as a result, various attempts at change gradually cancelled themselves out. It is probable, however, as regards more recent--and future--processes, that the situation will prove to have changed, for the new institutions are no longer being established side by side with traditional universities with a high reputation but in a context of sharp deterioration in the prestige of the latter.

5.1 The open university

The devising and introduction of open higher education systems in Latin America has been a recent innovation. The most important experiments are taking place in Venezuela, Mexico and Costa Rica, but all three differ considerably. In Venezuela the National Open University (UNA) was set up in 1977 with a different status from the other universities in the country. In Mexico, on the other hand, the Open University System (SUA) was created within the UNAM itself, so that it was able to take advantage of the academic and technical infrastructure and existing resources and facilities. In Costa Rica, the 'Universidad Estatal a Distancia' (State Distance Education University) was set up in 1977; it has autonomous status. Unfortunately, there is still no detailed assessment of the progress of these projects. On the otherhand, some of the factors behind their development can be indicated, along with a number of the problems they have been facing in the process of their establishment.

The open system was introduced as an alternative way of tackling the problems of coverage and financing at the higher education level. According to the most widely accepted theories in the field, open systems were designed to cater for the growing demand for higher education through the provision, at a lower cost, of a high level of instruction. For instance, the National Open University of Venezuela set out as its principles of operation: 'education as a means of democratization (to this end it embraces a wide field, both geographically and socially); education for independent development (it therefore trains people who, through science

and technology will provide solutions for the nation's problems); education for innovation (in this field Venezuela is in the vanguard of Latin American nations, in that it has introduced a new educational methodology and a new teaching technology)'.

'The UNA considers its action from three standpoints, which are in line with process of independent development: the instrumental standpoint, to which the criterion of effectiveness is applied, and whose object is the effective achievement of the objectives in the time allotted and with the means decided on; the economic standpoint, to which the criterion of efficiency is applied, and whose purpose is to ensure that the objectives attained are commensurate with the effort expended and the resources used; and the social standpoint, to which the criterion of relevance is applied; it is involved because the results achieved are related to the social milieu. The first standpoint means that a working adult can receive an education by new methods; by these same methods the second makes it possible to cut costs; while the third is aimed at the actual transformation of the existing state of affairs and the actual integration of knowledge into the social environment' (34).

Certain isolated facts on the progress of this project, however, point to aspects which deserve greater attention. From the quantitative point of view, UNA began with an enrolment of about 20,000 students, the majority of its courses were designed to provide professional qualifications. Even if it can be said that this situation is a temporary one, it is clear that in many ways UNA is duplicating courses already provided by the traditional universities; this raises doubts as to the success its graduates will have on the employment market where they will be competing against professionals in the same branch who have been trained at the traditional universities (35).

At the same time doubts exist concerning the other objectives the open systems claim to pursue: democratization, cost-cutting and consistency with development requirements. At the moment, in fact, there is no precise information on these aspects, but it is maintained that most of the UNA students already have qualifications at the third level and that there is no guarantee that costs are lower (if an analysis is made of efficiency in relation to costs at other universities). Furthermore, it has been maintained that open systems are appropriate for extending basic scientific and technical knowledge, but not for training the high calibre personnel that developing societies so urgently need (36).

In Mexico's case too, assessments are few and far between. Four institutions are currently providing open education courses. The Distance Education System (SEAD) at the National Pedagogical University, the Open Education System (SUA) organized by the National Autonomous University of Mexico, the Open Technologies System provided by the General Directorate of Technology Institutes and the Open Education System (SAE) at the National Polytechnic Institute. These courses are co-ordinated by the State Secretariat for Education through its Open Systems Co-ordinating Council.

The reasons behind the development of these courses are the same as in other countries: increasing entrance demands, budget difficulties, the lack of relevance of university courses to production requirements, and so forth. However, the limited number of assessments that have been made show that the circumstances surrounding the original establishment of these systems have changed a great deal and that their introduction requires considerable care because of the heavy initial investment and the need for a sound academic infrastructure which will guarantee the quality of the services provided (37).

In the case of Costa Rica, the UNED seems to be achieving its aim of catering for a section of the population other than that which has access to the traditional universities. From the standpoint of age groups for example, there are more students

over 23 years of age enrolled in UNED courses than in the other universities. The authorities are also clearly striving to gear education technologies to local needs and possibilities (38).

There is, in this connection, a frequently encountered fallacy in literature on the subject that attributes the antidemocratic, rigid and traditionalist characteristics of the formal education system to its technical aspects; it is there upon assumed that by changing the technology, these characteristics can be eliminated. This kind of new technocratic utopia has been rapidly refuted by the facts, and it is becoming increasingly clear that there is no reason to suppose that the objectives that the traditional system fails to achieve could be attained using new educational practices, if the variables which define the social context remain unchanged.

5.2 Education and work

Higher education in Latin America and the Caribbean has traditionally been characterized by its strong attachment to the academic approach and its lack of relevance to the requirements of the productive apparatus. These trends are reflected more in actual practice than in theories concerning the way in which the teaching/learning process and the training of human resources should be developed. As far as principles are concerned increasing ground has been gained in recent years by theories which advocate the discarding of these traditional features and establish the basis for far-reaching reforms in teaching practices, curricula and the institutional organization of higher education establishments so as to ensure that there is a close link between education and the world of work. The Regional Conference of Ministers of Education and Those Responsible for Economic Planning held in Mexico City in December 1979 devoted much of its time to analysis of this problem and its deliberations and recommendations provide a clear view of the underlying notions guiding the development of this subject.

In the first place, there is no doubt that the link between education and work transcends purely occupational objectives. It takes its place in the more general context which defines the formative value of the relationship between theory and practice, and between manual and intellectual work. Whether one considers the psychological approach concerning the development of the intelligence or the educational and social approach, one finds broad agreement with regard to the value of the association between education and work in all-round training and in fostering a sense of social responsibility and community service. The varying degree of importance attached to this link is governed by the social and cultural context to which it applies. The distinction between manual and intellectual work represents in many societies today one of the criteria by which social differences are defined. Doing away with this distinction implies, therefore, a significant change in social terms. At the same time, the need for this link has been associated in the past with industrial expansion and scientific and technological development. In many countries in the region development of this type is very limited and there is considerable dependence on the major economic powers; hence the lack of local demand for integrated education.

Linking higher education to the world of work has other specific characteristics. On the one hand the link is important as regards the task of education itself; and on the other, it is involved in the question of research. The subject of research will be dealt with further below. A brief review will be made here of experiments and of the problems that are being encountered in linking education and work in the professional training process.

In the first place, it must be acknowledged that despite the broad agreement on all sides about the need to eradicate the academicism of higher education, this

characteristic still prevails in practice. However, in the case of certain courses of study there is a long and valuable tradition of practical training periods and other forms of link-up with the world of work that are now firmly established and could serve as an important point of reference for new experiments. Except in cases such as Cuba, where the combining of education and work is a major feature of the education system as a whole, and Guyana, where over the last ten years most post-secondary establishments have started to organize study service programmes, such experiments are relatively few and far between, and are usually confined to one particular course or individual institution.

There are, unfortunately, no detailed assessments of the scope of such schemes, their achievements, the obstacles faced and prospects for the future. Two major problem areas might tentatively be proposed for analysis: those deriving from internal factors in the educational system (attitudes of teaching staff students and the authorities; institutional factors which militate against flexible linking arrangements; teaching problems concerning suitable curriculum design, etc.) and those deriving from external factors (prevailing development patterns, employment market conditions, etc.).

It has been pointed out--in connection with the first problem area, that there is still failure to appreciate manual and productive work and resistance to the introduction of innovations affecting the traditional definitions of the roles of teacher and student (39). Institutions are thus not sufficiently well organized to introduce these methods properly and a variety of bureaucratic and administrative difficulties arise which hamper achievement of the educational objectives. Lastly, developing curricula geared to these objectives is no easy matter and, because of their novelty, demands a long period of experimentation and adjustment.

The second category of problem is even more important in that changes in these areas are not dependent on educational action but on structural modifications. Both quantitative and qualitative trends have been reported here. The movement in the employment market is said to be increasingly towards compression, rather than expansion of the labour force. Greater qualification requirements are going hand in hand with a drop in the creation of posts; bringing education into line with these trends would mean restrictions on access.

As far as the qualitative aspects are concerned, there is, it is frequently argued, a certain contradiction between the conception of work as being educational and formative, on the one hand, and the norms governing working relations in the production units on the other.

5.3 The university, research and industry

The vital importance of the role of scientific and technological research in the development process is beyond all question. There is a much smaller measure of agreement, on the other hand, when we come to consider the part played by the different institutions that are concerned with research. Is the university to incorporate this new function within its structure? If it does, should it take part in all forms of research or just some of them? Should its main aim be to conduct research or rather to limit its action to the training of future researchers? What changes are needed in its internal structure to enable it to perform this role properly? To what extent is the 'massification' of university education impeding the development of research activities? These are the central issues of a current debate involving not only the university but the whole range of educational, political and economic agencies, all of which are seen as having key roles to play in the development process.

Jorge Graciarena (40) deals extensively with this problem in his study on the functions of the university. On the basis of his analysis, it can be said that the university in Latin America has incorporated research among its functions without introducing the institutional changes to enable it, to fulfil this role adequately. Here Graciarena emphasizes, first the importance of post-graduate training as a key factor in the task of preparing the high-level teaching and research staff the university requires. In the second place, he underlines the importance of everything to do with the 'academic profession', stressing particularly those aspects concerning the institutional guarantees that give the researcher the necessary basic incentives in his work, whether academic (continuity, facilities, etc.) or material (remuneration, etc.). Over and above these objective factors, however, Graciarena points to one in the absence,of which all the material facilities may prove meaningless: he is referring to the fact that researchers should subscribe to certain ideals and values relating to commitment and the importance of the scientist's tasks in the context of underdevelopment and the achievement of an adequate degree of independence. Without this ethical dimension any institutional measures that might be drawn up would become empty schemes devoid of content, or would lead to other courses of action, simply reflecting academic models alien to the real needs of the endogenous social development process. Achievement of this kind of professional conscience and the devising of the appropriate institutional structures clearly depend on something more than the mere resolve of all those involved in these processes. The way technological innovation works in Latin America and the Caribbean and the links being established between the university, production units and the whole range of institutions responsible for science policy, would appear to be the most important factors in accounting for the difficulties being encountered in introducing scientific and technological research into the university structure.

In general terms, the usual explanation for the inadequacy of research activities in universities and scientific institutions is that the root of the problem lies in the production sector demand. In Latin America and the Caribbean, industrialization through import substitution and the considerable presence of transnational corporations call for types of employment and qualifications that are basically connected with the tasks of administering, installing, operating, maintaining and supervising the technologies used in production. Conversely, the demand for the development of research capacity is slight, and this accounts for the unsystematic and perfunctory way in which research activities are organized in the universities, whether from the financial or the curricular point of view (41).

A number of recent studies that explore the subject in greater detail (42) make a distinction between 'major' technological innovation--new designs or the profound transformation of old ones--and 'minor' innovation, such as the adaptation or improvement of existing designs. The development of these processes depends upon the degree of diversity in the productive apparatus and upon company decisions concerning the allocation of resources; however, the basic point here is to consider the role of the university in the two different contexts of technological innovation.

'Major' technological innovation is largely a stranger to Latin America and the Caribbean. Even in the countries with the most highly developed industry (Argentina, Mexico, Brazil, for example), the equipment in use comes from abroad and the margin for local innovation is very restricted. From this point of view, therefore there are very few production requirements that might foster the development of research.

On the other hand various empirical studies conducted among companies have revealed that 'minor' innovatory activities are, in contexts of considerable technical diversity, far more important. It would seem that both the adaptation of new designs to local conditions and the maintenance of old equipment at competitive levels of efficiency encourage companies to allocate sizeable funds to research. By its very nature, this type of innovation is closely connected with the particular company's activity and policy decisions, a factor which, gives greatest momentum to its development. Nevertheless, while it stimulates the 'domestic' effort, this factor also acts as a barrier to any link-up with other institutional bodies such as the university.

Viewed in these terms, technological innovation processes in the region would seem to leave little room for linking up with the university. But to assume from this that concern for the integration of scientific and technological research in the university framework lacks any justification may be jumping to a rather hasty conclusion.

A recent study by Jorge Vivas, which takes stock of available knowledge concerning this subject and sets out a reference framework for future analyses, points out that on the basis of the experience of certain countries in the region it can be said that: '(a) the academic structure and internal organization of the university have a very marked influence on the academic training of the graduates; (b) the academic characteristics of university education have a significant impact on the ways in which scientific and technological activities are carried out in the production sector and on their dynamic force; and (c) the structure of academic training within the university is not necessarily affected by the apparent limits established by the effective demand for knowledge emanating from the production units (43)'.

This study shows, on the basis of these parameters, that there exists in fact a genuine division of labour between the university and the production units concerning the training of manpower. In this division, the university's contribution lies mainly in the academic components of professional training, which facilitate effective adjustment to the changing requirements and diversity of the productive apparatus. Furthermore, it has been established that the availability of human resources with research capabilities is an important incentive for firms to tackle research and development activities they could not otherwise develop.

At the same time, account must be taken of the fact that academic training itself--regardless of production sector requirements--has its own research needs. It is widely acknowledged that the university's contribution to the technological innovation process has at least two different dimensions: the first, linked basically with the educational aspect concerns the training of personnel with the necessary capacity (both cognitive and non-cognitive) for the development of innovatory activities; the second, relatively unaffected by educational requirements, would involve the direct participation of the university in the work of technological innovation. Both processes are largely self-contained, for although the capacity for innovation clearly cannot be developed without reference to the exercise of that capacity, catering for educational demands is one thing and production requirements, another. In the one case what is important is the value of the innovatory experience in terms of the individual's learning process, and not in scientific and technological development. This is why 'discovery' (from the educational standpoint) does not have to be something 'new' in terms of knowledge; if it is 'new' for the individual who is receiving training, then that is sufficient. On the other hand, that which is 'new' from the production point of view must be something that will lead to modifications in processes or products that have not been thought of previously.

Academic training requirements form then, one of the basic aspects through which the university can and should tackle the problem of building up its research capabilities.

The danger involved in the independent development of research and the training of researchers by the university is, as we know, the exodus of such professionals to the international scientific production centres. The brain drain is a constant in the dependent countries and there is an abundance of well-known literature on the subject. However, the solution to this problem cannot be found by cutting back on quality in the universities, but rather by changing the structural factors that hamper the absorption of scientists in the production sector. Again, lines of emphasis of education and research are also involved in this issue, for the raising of quality is usually measured in terms of conformity with international parameters and not its contribution to the solution of underdevelopment problems.

5.4 Postgraduate studies

Postgraduate studies have been gathering momentum and importance over the last twenty years. Although we have no precise analyses of the characteristics and scope of these studies, a recent survey based on four national cases (Mexico, Venezuela, Colombia and Brazil) pointed to a set of significant features that are sufficient to give us an initial insight into the problem (44).

The main characteristics of postgraduate courses in the region are, according to this survey, as follows:

There is a wide variety of courses and programmes, in terms of both quality and quantity. Mexico, for example, had up until very recently 1,179 courses, whereas Brazil offered 822, Venezuela 263, Colombia 276, Peru 114, Guatemala 29 and Costa Rica 16. In addition, some countries provide courses leading to doctoral and masters' degrees and specialized qualifications; others do not offer doctoral degree studies and in some cases make no provision for masters' degrees either.

Notwithstanding this diversity, there is very marked geographical and institutional concentration. Geographically, supply is centred in the major towns and cities; as regards institutions, it is concentrated in the universities, particularly the major national State universities. The Central University of Venezuela, for instance, accounts for 40.7 per cent of the courses provided in the entire country; the universities of São Paulo and Rio de Janeiro are responsible for 42.8 per cent in Brazil; in Mexico, the UNAM and the IPN provide 31 per cent, and so on.

Save in the cases of Brazil and Cuba, there is a clear lack of planning as regards these activities, both in terms of their internal structural linking and their relation to national or regional development plans. There is no legislation governing their functioning and although serious attempts at co-ordination have been made substantial progress is still needed in this respect.

The quantitative expansion of these courses cannot be accurately evaluated. Pablo Latapí estimated a figure of 33,743 students for 1978 which can be accepted as approximate, although the growth rate is high and this figure has already been exceeded (45). Generally speaking, students turn mainly to the traditional careers: medicine, law, engineering, architecture, etc. In this respect, the most serious problem is not a quantitative one, but the

fact that postgraduate courses reflect the same pattern as those for undergraduate, i.e. studies are directed towards the exercise of a profession and not the development of research and teaching capacities of a high academic level. Here too, important differences are to be seen from country to country and institution to institution. In Brazil and Mexico, for example, courses relating to science and technology are more important than in Colombia and Venezuela.

The absence of specific surveys dealing with this subject makes it difficult to account for the factors behind the expansion of postgraduate courses in the region and their real impact on the employment market, scientific research and social development requirements as a whole. Nevertheless, consideration should be given to the following working assumptions at least:

In the first place, foreign influence has played and continues to play a very important role in some countries in determining the structure of postgraduate studies. This influence has been channelled through the direct assistance provided by universities abroad and through the action of students from the home country who follow postgraduate courses abroad and, on their return, encourage the adoption of foreign models. As stated by E. Oteiza, this is an effort to apply the same strategy as that of industrialization through import substitution: producing locally what was previously bought abroad (46).

In the second place, it has to be realized that the expansion of postgraduate courses has also been in line with the general trend of educational expansion in an increasingly rigid employment market as regards the creation of new employment openings and the need for higher and higher formal qualifications. The holding of a master's degree or doctorate is increasingly necessary for access to certain posts; this trend is bound to continue as the supply of postgraduates increases. Some indicators point to the fact that the rising demand for postgraduate qualifications has been originating in the education system itself, which is becoming the main employment sector for these persons (47).

In the third place--and this is closely connected with the previous point--the expansion of postgraduate studies is linked to the gradual deterioration observed in the quality of undergraduate studies. Attention has been drawn, here, to the dangers involved in encouraging the creation of master's degree courses in universities where first degree courses have not been properly consolidated: the postgraduate course would attract all the best lecturers and researchers and weaken still further the quality of the undergraduate course.

Fourthly, a series of institutional factors are encouraging the development of the postgraduate sector; these are connected with the need to extend the number of years of study in order to maintain high levels of excellence and keep pace with developing trends in studies and research at the international level.

There is a danger here that a growing imbalance between local requirements and international scientific development will help to produce professionals who have stronger links with the academic community abroad than with their own milieu, thus accentuating even further the factors of dependency (48).

5.5 The planning of higher education

The increase in student numbers and the growing diversification of higher education institutions have resulted in broad agreement concerning the importance of including more systematic planning in higher education policies. At the present time,

higher education covers a very varied range of establishments in terms of size, lines of emphasis, resources, location, prestige, etc., which are attracting growing numbers of students and, all in all, account for a considerable part of the national budget. As has been stated earlier, this entire process is in no way the result of decisions based on rational planning consistent with the requirements of a balanced social development process. On the contrary, it would seem that higher education has been the level of instruction most remote from any form of planning, giving rise to the paradoxical situation whereby the university is producing the personnel and theories for the introduction of planning and a rational approach in all sectors of society, except in its very midst.

The difficulties encountered in developing planning in higher education are often attributed to the tradition of university autonomy that prevails in the region.

The problem of autonomy is a complex one and cannot be explained without reference to the historical context in which it emerged and developed. However, it is important to bear in mind that although certain interpretations of the concept of university autonomy could give rise to the even more complete isolation of the university vis-à-vis social needs, it must also be remembered that the abolition of such autonomy has, in most cases, provided no better guarantee for a more rational relationship between the university and society.

The abolition of university autonomy is not a sufficient condition in itself to ensure the success of planning. However, current circumstances clearly demand that the traditional notion of autonomy be revised, so that arrangements may be introduced that will ensure co-ordination at three different levels: between the various higher education institutions, between these institutions and the rest of the education system and, lastly, between higher education and the needs of social development. This last aspect covers a number of issues, including more especially, the co-ordination of scientific and research policy.

5.6 Changes in curricula and organization

The traditional organization and study programmes of Latin American universities were, as we know, based on the academic chair/faculty structure. The effects of this model, from the educational and institutional points of view are also common knowledge: redundant expenditure, difficulties in interdisciplinary work, few possibilities for research and specialization, the break-up of the unity of knowledge and of the very idea of the university, etc. These aspects have been severely criticized over recent years and systematic attempts have been made to remedy the situation by introducing alternative models.

The quantitative expansion of enrolment has also helped to bring about a situation in which the design of appropriate organizational and educational models has become a crucial issue, for there is general agreement that expansion in the context of the traditional model has been one of the factors behind the sharp drop in the quality of higher education.

The innovations that have been attempted cover a variety of aspects--syllabuses, organizational structure, introduction of new functions and tasks, etc.--and reflect a number of basic lines of approach:

greater flexibility in syllabuses, with a wider range of alternatives and options; introduction of short courses and intermediate diplomas; the drawing up of syllabuses in career-guidance terms, so as to include objectives, forms of assessment, methodologies, professional profiles to which studies relate, etc. In the same way attempts are also being made to introduce new curriculum designs which will facilitate interdisciplinary approaches and the use of modules;

the updating of teaching methods, discarding the traditional lecture method and introducing systematic teacher-training for university teaching staff. Considerable efforts are being made, in relation to this question, to ensure that there is more full-time teaching and to place the teaching career in higher education on a proper footing;

closer ties between teaching and research;

the introduction of organizational models that are more in keeping with the objectives proposed especially departmentalization, the creation of institutes and the introduction of general preparatory courses.

There is, however, a notable lack of feedback on the effect these measures are having as regards the changes it is sought to bring about. One or two items of information give cause for serious concern about some of the problems. In Panama, for example, a 'ciclo de orientación' course was introduced in the first year of studies with the aim of facilitating career choice and avoiding failure at the end of the initial year. Despite this, the percentage of first-year repeats is rising steadily: in 1978, this was 10 per cent--in 1980 it had risen to 36.6 per cent (49).

Departmentalization, adopted as an appropriate form of organization which would solve the problems of duplication in regard to the professional system and the splitting up and 'feudalization' of power in the faculties, has its own difficulties and dangers. One recent analysis of the Brazilian experiment here shows that departmentalization can lead to serious fragmentation of the training and learning processes (50). Furthermore--contrary to the aim pursued--the gulf between education and research is apparently widening. This danger was pointed out some time ago in relation to the difficulty of introducing an interdisciplinary approach in a departmentalized structure (51).

6. FUTURE UNCERTAINTY AND THE VALUE OF KNOWLEDGE

In Latin America and the Caribbean, the outlook for the future is not encouraging. Developing trends in recent decades have in certain respects exceeded even the most optimistic of predictions made twenty or thirty years ago and have revealed--at the same time--an alarming inability to solve some of the most basic problems. The unattained goals of the past together with the new challenges of the future now have to be tackled at one and the same time. The peristence of illiteracy and the steady introduction of computer sciences are two eloquent illustrations of how problems and processes reflecting different stages of development can exist side by side.

At the same time, this same period has produced an abundance of 'blueprints' based on the assumption that the state was capable of implementing coherent strategies which would benefit society as a whole. In certain areas, however, results have fallen far short of the planners' expectations and forecasts. Dynamism is the result not so much of the state's 'technical' capacity as the relative power acquired by the different sectors of society in the interplay of conflicting forces and their capacity to bring pressure on the state with specific proposals mirroring their own particular interests and aspirations.

What is certain here is that some of the assumptions that fostered the expectations and proposals drawn up over the last decades have collapsed. The crucial factor that has ceased to prevail is probably the belief that economic growth would bring with it the solution to the major problems of underdevelopment. Social development trends have, on the contrary, demonstrated that despite the sustained growth that has occurred in the region, the most flagrant problems of social equity persist--and in some cases have become more acute. The aspiration for greater social justice is no secondary aspect of development processes: on the contrary, it is what fosters expectations and gives purpose to the efforts to achieve growth.

Marshal Wolfe summed up this situation admirably when he stated that there was an increasingly widespread sense of lost opportunities, of growth processes that acquired unhealthy features, of the squandering of irreplaceable human and natural resources, and of the urgent need for new concepts and strategies. This was, he said, occurring not only in anti-capitalist opinion, which had never accepted such models or myths,but also amongst the intellectual sponsors of those very same models and myths, who now considered that the discrepancies between expectations and reality were not the result of inefficiency and lagging behind characteristic of any transitional period, which could be remedied through faster growth, but were due to inherent features or even the very sources of the dynamism of 'peripheral capitalism' or a 'transnational' style of development (52).

The latest publications of Raul Prebisch (53) are a masterly sample of the about-turn that has occurred in the way development problems are viewed in Latin America. The various attempts at defining a 'new model' of development show that there is growing dissatisfaction with the prevailing development patterns and a need to design new models that will attract and generate a minimum degree of consensus as to the aims to which social action is directed.

The future is, therefore, an uncertain one in which, if the current trends towards the concentration of wealth and the benefits of growth continue, could herald a sharp rise in tension and imbalance.

What role could be played in this context, by education and, more specifically, higher education? One thing is certain; it is no longer possible to answer such a question with the optimism of the 'sixties that was inspired by the economic approach, education being seen as a guarantee for higher productivity and greater

income equality. Although today the contribution of education to social development seems less ambitious, it is at the same time far more complex than was foreseen in the economists' forecasts.

It is less ambitious in that it can no longer be presented with the characteristic optimism of the traditional approaches. But it is more complex inasmuch as its contribution is not confined to productivity and income but extends to social consensus, participation, creativity, social stratification--in short, the entire functioning of society, and not simply, or even principally, the operation of the productive apparatus.

Having regard to future uncertainty and the complexity of education's social role, the approach that should guide educational activities in the future must combine, in a coherent way, the desirable and the technically feasible. Closer links between planners and social critics would seem to be called for here. The planners are going through a critical period for their forecasts have proved to be very largely wrong and they have been unable to influence national policy-making. Yet it must be said in their favour that they still have the capacity for pursuing their constant search for specific alternative policies designed to solve the problems of backwardness and underdevelopment. On the other hand, the critics have shown greater clear-sightedness in highlighting the inconsistencies of the prevailing social system and in devising Utopian blueprints for society. Nevertheless, they often fail to concern themselves with the actual ways and means of putting such schemes into practice.

At the same time educational policy proposals at all levels should reinstate one aspect that has clearly been overlooked on many occasions: the value of knowledge and of intellectual development. The responsibility of education and of the education system is very considerable here, for although it is not the only social agency to promote such knowledge, it is the one with the greatest potential for doing so democratically. Criticism levelled over recent years at the self-perpetuating and conservative character of education, and at the traditional academic outlook of the university has deflected attention from this problem. Yet the quantitative expansion referred to in the first part of this study has shown that, despite everything, greater democratization is being achieved in education than in any other part of the social spectrum--in incomes or in political power, for example. Access to education is a goal which for vast sectors of the population, has already been attained and although much still remains to be done here, one fundamental concern should be to ensure that <u>formal</u> access becomes <u>real</u> access to the forms of knowledge and learning that are most important in social terms.

6.1 <u>The democratization of higher education and of basic education</u>

The prospects for the external democratization of higher education in Latin America and the Caribbean reflect a number of problems. In the first place, it has to be said that the expansion rate of higher education is already showing signs of decline. The universities are restricting admission and social demand is either being turned away or directed to alternative facilities outside the university. In Chile, for example, university enrolment dropped from 146,451 students in 1973 to 95,925 in 1981. This decline was due to the fact that the vast majority of applicants were turned away; in 1979, the proportion of places to applications was 1 to 11.5 and in the more important universities the ratio was as high as 16 applicants for every place (54). However, in the majority of countries in the region, the external democratization of higher education is failing mainly in regard to the implementation of the universal provision of basic education, as reflected in the large number of pupils who are excluded from the primary school and the first part of secondary education. This structure implies that the very

nature of the demand for higher education is fairly undemocratic, since applicants come mainly from the middle and upper classes. The prerequisite for greater democratization in higher education is, therefore, the democratization of basic education.

On this basis, it could be said that the legitimacy of policies governing access to higher education resides in the democratic criteria of educational policy as a whole. In other words, the policy of access to higher education cannot be assessed other than in the context of educational policy as a whole and social policy in its entirety.

In this respect, it is clear that marked tension and conflict are likely in the near future. The social demand for access will be maintained, either by mere demographic pressure or by increased efficiency in secondary education, or again by the shortage of employment openings, which is transforming education into an increasingly longer 'prelude' to entry into working life. More than ever, the democratic nature of educational policy as a whole will have to be stressed rather than that of higher education alone. The danger of aggravating social polarization by giving more and more opportunities to those who have already succeeded in gaining access to a lengthy period of studies whilst putting off the introduction of universal basic education, is a foreseeable one that must be averted.

Furthermore, the democratization of basic education is a task which should involve higher education. As we know, responsibility for training teaching staff for basic education lies essentially with higher education. Provision for the human resources required for this task--as regards both numbers and qualifications--must be made through the universities of non-university establishments. Here, all analyses concur in pointing to the marked shortcomings in teacher training with respect to what is required of teachers when working among certain population groups, especially the marginal urban and rural populations (55). Higher education has a considerable responsibility here and we may well ask if the shortcomings observed are due solely to poor teacher training procedures or whether they do not also stem from weaknesses in the educational sciences themselves. In other words: do teacher training courses fail to provide the right answers to the learning problems of pupils in marginal zones simply because syllabuses are out of date and teachers poorly trained, or is it because these answers have not yet been formulated in precise, systematic terms by the educational sciences themselves? There are serious shortcomings in the training of primary and secondary teachers of which we are all aware. However, the time has come to get down to the problem of the lack of any scientific response to the learning problems of children in marginal areas: bilingualism, malnutrition, differing cultural codes, etc (56). Here higher education--especially those training and research units working in areas such as psychology, pedagogy, anthropology, didactics, etc.--have a vast field of responsibility and action.

6.2 Differentiation and uniformity in higher education

One of the principal trends in higher education in Latin America and the Caribbean is its growing internal differentiation.

Although apparently the university claims the greatest part of enrolment, this is a very formal and superficial indication of uniformity for the internal stratification of university establishments is an increasingly widespread phenomenon in most of the countries.

The root of the problem is that differentiation is a response on the one hand to a structural process (emergence of new social functions, new requirements by the production sector, etc.) and, on the other, to an attempt to maintain control and

a monopoly in certain fields of élitist training in a certain number of institutions. In this way diversification would be able to meet social demand without disrupting the social stratification system.

The danger in this trend is that it is liable to create a range of institutions which lack any structural linking, are sharply divided in terms of the social origins of the students, and respond more to social reproduction criteria than to the needs of the development process.

The alternative is not to return to the system of the single university, but to establish a common basis for all institutions in higher education which would be governed by certain fundamental criteria as regards the quality of education. Whatever the course offered--liberal professions, teacher training, scientific and/or technical studies, there should be a uniformly high academic quality of education, defined not simply by technocratic patterns or by its relation to the international frontiers of knowledge, but basically by its relevance to the requirements of an autonomous and socially equitable development process on the one hand, and its suitability to the students' learning context on the other.

When the quality of education is thus defined, it becomes possible to overcome the dilemma that reform has faced in the past--high quality associated with élitism, or 'massification' accompanied by a drop in academic standards.

6.3 The quality of education and teaching in higher education

Quality in higher education, which, as indicated in the preceding section, is the key to ensuring that diversified institutions find a 'common denominator', is increasingly becoming a problem of teaching. Traditionally, higher education has remained aloof from concerns of this kind. Despite poor efficiency and the lengthy duration of studies at present, etc., there has been a marked lack of concern for the actual way in which teaching is carried out. The usual explanations for such problems have almost always referred to factors that have nothing to do with the actual work of teaching: the low proportion of full-time teachers and the high proportion of students studying and working at the same time. These aspects are certainly very important and should be dealt with by means of specific policies on grants, funding, etc. However, the situation today, and in the foreseeable future, makes it necessary to view the teaching problem in higher education in a far broader context, for the circumstances surrounding the teaching-learning process have changed considerably: there is now a wide range of institutions; there has been a massive intake of students whose socio-cultural origin is not that of the traditional élite and, furthermore, current training requirements (high academic quality and social commitment) cannot be met in the absence of appropriate curriculum design and teaching-learning methods.

The diversity of national and institutional situations is such that any standardized solution is to be avoided. What is required, however, is to explore in greater depth the trends that have begun to take shape in the region, particularly as concerns institutional organization, curriculum design and teacher training. Here, the formalistic approach--which assumes that changing the organizational structure is sufficient to achieve the goals in view--must be discarded. Organizational changes are indeed essential, but unless there is a systematic policy designed to foster the attitudes that will match such new organizational models, the changes will be merely superficial, and the old pattern of things will remain within.

The question of attitudes is a key aspect in the training of teachers for higher education. It must be borne in mind that it is no longer possible to exercise teaching functions at the higher level of education without the basic notions of teaching practice that the new conditions demand. Teaching must take into account a whole array of factors: the students' background (socio-cultural origin, assiduity, etc.); working conditions (facilities, staff numbers, etc.); the development of the specific scientific discipline; the objectives of the teaching function which transcend the handling of information and include the development of the students' problem-solving capacity, their ability to look for information by themselves, and their social commitment in seeking solutions to their country's problems.

Because of all these factors higher education will have to make use of new teaching practices. Teachers must, therefore, be trained appropriately, for otherwise there is a danger that they may in future face the possibility of having to use methods that were not applied in the case of their own training.

In the search for new teaching strategies, there is considerable pressure--and this will certainly become stronger in the future--to find economically attractive formulas. Given the shortage of available resources, there can be no doubt that this criterion can be justified in social terms. But in this case, as well, there must be some serious attempt to analyse the effective contribution of certain technological methods in ensuring sound tuition at a low cost. In educational innovation, furthermore, there is a danger that the solutions of the advanced nations may be adopted without any proper analysis of their capacity to match up to local problems. In this vast field of action, higher education can call upon the services of the personnel that it is training in such large numbers: the education specialists. The contribution of the education and teaching sciences at the third level opens up a wide range of questions to which only the beginnings of answers have so far been found: introducing professional practice and training in university education; designing new methods of teaching; learning and assessment; advanced training in the use of seminars, laboratories, tutorials, etc; the introduction of interdisciplinary approaches in curriculum design; syllabus reform, etc. (57).

6.4 Planning in higher education--possibilities and needs

The most obvious trends to be seen in higher education over the last few years cannot be ascribed to any deliberate planning at this level. As we saw in the first part of this study, there have been major difficulties in introducing planning methods into the higher level of education. For one thing, the principle of university autonomy has made it difficult to overcome the university's traditional isolation from the rest of the education system and from industry. Secondly, social demand has exceeded the planners' forecasts and brought about rapid growth and diversification at this level which has been guided by socio-political criteria rather than any rational compatibility with the possibilities of the structure.

This situation raises many issues and challenges for the future. In these circumstances, planning is all the more necessary and, at the same time, all the more difficult. As 'spontaneous' diversification and growth builds up, it becomes both increasingly difficult and more necessary to place operations on a rational basis. The most obvious danger is that the units not subject to official control--the autonomous universities with their massive enrolment and dissident tendencies--will be left out of planning proposals, experience a shortage of resources and a gradual decline in their quality, while the new institutions will be seen increasingly as establishments where planning possibilities are linked with their very reduced margin of independent action and a certain 'verticalism' from the point of view of internal administration.

Political factors are of fundamental importance in this problem. The question of participation, of freedom to criticize, of the connection between the university and the social forces are all issues involved. Future options here are as varied as is the nature of national political régimes. It is nevertheless possible to point to certain aspects that can be considered generally valid.

Firstly, it is clear that planning in higher education takes priority over any consideration of autonomy. It is impossible, in this connection, to endorse attempts to maintain autonomy based on the isolation of the university as regards its commitment to society at large. In compensation however, educational planning criteria should also provide for the possibility of critical questioning, the development of creative thought and innovation, etc.

This requirement relates not only to the legitimacy of critical activity per se, but to the nature of planning activities themselves. In the face of an uncertain future and rapid changes in science and technology, planning proposals cannot disregard the contribution made by innovatory or critical approaches.

Secondly, planning operations must provide for the considerable development of evaluation in respect of innovatory experiments in higher education. Reliable data must be available in order to provide a sound basis for decision-making with a view to change so that there is no danger that the new schemes introduced will end up repeating the same processes that it was sought to modify.

In the third place, planning in higher education has to respond to increasingly complex requirements as a result of the need for the internal co-ordination of education at the higher level and for the linking of higher education with the rest of the education system and with the economic, political, social and cultural demands of society. This growing complexity creates the need for interdisciplinary and participatory approaches in the process of planning itself.

6.5 Socio-professional prospects

The interpretation of recent trends and the most frequent forecasts concerning the relationship between professional training and the requirements of the production apparatus, are often couched in catastrophic terms. Forecasts of this kind base their assumptions on the relation between the quantitative expansion of education and the growing rigidity of the employment market. This phenomenon is giving rise to the steadily increasing under-utilization of individual abilities and a growing decline in the value of the length of the study period on the employment market. If these trends are maintained, there is likely to be growing conflict as a result of dissatisfaction amongst graduates at the sytem's structural incapacity to absorb them productively.

The emergence of electronic computer technology has introduced new factors in this situation. According to some authors, it is no longer simply a question of a quantitative imbalance but also of a considerable qualitative mismatch as a result of the new definition of professional training. Steger, for example, maintains that the professional training structure in our educational systems no longer matches this new situation. Employment prospects have changed fundamentally whilst access to the education system continues to respect the professional requirements of the former situation. The effect of all this, he says, is likely to be the following: (1) the absolute number of employment openings will drop; (2) posts for semi-skilled or unskilled workers will more or less disappear; (3) the number of high-level workers and employees will level off; (4) professional qualifications demanded for top-level jobs will become steadily higher and higher. The link between growth, technological progress and employment will disappear (58).

The peculiarity of the Latin American case in relation to forecasts of this type is that it has to face simultaneously the problems of the social marginality of those sectors of society beneath the subsistence level and the problem of 'modern' marginality, the result of the growing automation and computerization of the formal sector of the economy

The inconsistencies produced by such trends make it impossible to assume that a balance can be maintained indefinitely. In certain countries, the crisis provoked by such contradictions has already led to the temporary decision to maintain the prevailing dependent development pattern by 'freezing' the social process, using for this purpose strict authoritarian controls and exclusion from access to the universities (59). Nevertheless, decisions of this kind provide no more than a temporary solution to the problem and the price that has to be paid is very heavy in social terms.

In other countries, on the other hand, the response to this phenomenon has been to increase the degree of internal differentiation, so that new requirements arising out of technological developments are covered by particular institutions, while the process of devaluation and obsolescence is confined to the other institutions of higher education.

This policy trend, apart from being socially divisive, implies a considerable wastage of manpower and economic resources. Furthermore, it only postpones the problem; it does not solve it.

The insufficiency of these policies, on the other hand, points to the need to define development styles which will enable scientific and technological progress to be incorporated in projects from which the population as a whole will benefit. The problem, therefore, does not lie in the technology but in the political dimension and in society. In the view of most analysts, the population groups concerned by under-utilization and imbalance between training and employment would seem more inclined to call for far-reaching changes in the prevailing development patterns than to demand realistic modifications in education systems.

As a result changing trends in development styles, analysed in full detail at the most recent international gatherings, are focusing on social objectives (participation in the benefits of growth, endogenous development, respect for cultural diversity, and so on). In this context enrolment expansion cannot be seen as a dysfunctional imbalance nor can we go on expecting from it the advantages it conferred in the past. Although it is true that Latin America still needs to provide its population with systematic training in the light of the manpower requirements that the development process involves, the idea that education in the future will continue to play the socially differentiating role it has done in the past cannot be maintained. Educational expansion in the context of economic systems marked by high productivity and labour economies, will have a role that is increasingly linked with the achievement of a participatory, democratic society.

6.6 The dilemma of scientific research

The need to stimulate research capacity in all areas and to promote the role of the university in this process, whether through the training of research specialists or development of its own research programmes, is an obvious task for higher education in the future, as all the recommendations of the competent organizations stress.

The dilemma, however, is how to move away from past policies. Basically these were of two kinds: (a) close subordination to the demands of the productive apparatus, thus neutralizing or distorting research endeavours because of the dependent nature characteristic of technological innovation, and (b) independence vis-à-vis local requirements conducive to high-level academic training which encourages emigration abroad and strengthens the ties of dependency and backwardness.

Theoretically speaking, the policy for the future is one of achieving high research capacity geared to the requirements of autonomous development.

However, these alternatives and policies constitute the extremes of a very broad spectrum of possibilities and courses of action. In actual fact, whether consideration is given to national cases or the different areas of knowledge, the situation is just as complex and varied. The case-studies conducted under the CINDA project (60) reveal that the university can provide research and advisory services that are highly appreciated in industry. Other studies, such as the one already referred to on chemical engineers in Mexico, provide proof of the limitations imposed by a dependent productive apparatus on the development of autonomous research and production. The allocation of economic resources, often singled out as one of the most serious constraints upon the implementation of an effective research policy, is not sufficient in itself to solve the problem. Resources need to be used rationally, and, basically, should effectively serve social requirements.

From the institutional point of view, the university is gradually relinquishing its monopoly on scientific activity. The diversification and segmentation described in earlier sections is being accompanied by the emergence of a host of private or state centres and institutes which are making good the shortcomings of the university, or which complement it, thus making co-ordination all the more essential and complex.

As regards the training of researchers, differences are very considerable from country to country. Postgraduate studies are organized in a great variety of ways, and planning guidelines need to be introduced to regulate the expansion and the content of these courses in accordance with national research and development goals.

However, the key problem in the near future concerns the leaps and bounds being made in science and technology at the international level. It is generally recognized that the development of computers and computer sciences is an important qualitative advance. There is not, then, very much risk involved in predicting that there will be a considerable widening of the gap separating the advanced countries from the rest, the particular feature being that it will become all the more difficult to attempt to belong to the technological category of the developed countries. The two traditional categories of technology--labour-intensive and capital-intensive--have now been joined by a third--information and knowledge--intensive technology in which the most important factor is precisely, scientific and technological research.

Research and development in this field are very costly and the trend towards concentration is already becoming patently clear. Furthermore, the transfer of technology is notoriously difficult, owing to business secrecy, international regulations and the lack of local facilities for its installation. Two important aspects have been pointed out here: on the one hand, the need to participate in the process of innovation rather than to have access to products; and secondly, the current shift away from equipment based on 'individual' machinery towards production systems, which is having a marked impact on qualification requirements for engineers.

In this case, the danger has been quite clearly stated: '...science and technology have become increasingly under the control of corporate bodies which do not necessarily ensure that technology serves social ends and do nothing to remedy the economic disadvantages the Third World may experience. Furthermore, technology as such has a built-in organizational concept, the design of which is consistent with needs, skills and forms of society not frequently found in the Third World' (61).

Signs of a reaction to these challenges are beginning to be seen among the Latin American and Caribbean countries, albeit to a varying degree; this movement will have to be encouraged with clearly defined public policies. The regional aspect would seem to be the crucial element in such policies for at the national level there is no critical mass, financial capacity or market for ensuring the viability of this type of technological development (62).

Furthermore, considerable encouragement will need to be given to research in the social sciences so as to provide the basis for policies designed to safeguard cultural identity from the consequences of computer science development (63). The monopoly and control of information will tend towards concentration, just as technology does. This aspect of the future has, as yet, only vaguely measurable social consequences. But there is already sufficient factual evidence to show that policies are needed for the protection of cultural independence.

It will also be necessary here to ensure that cultural independence does not turn into self-induced exclusion from scientific progress. Development, for the countries of the Third World, and for Latin America and the Caribbean in particular, means finding the right formula for sharing in the scientific and technological revolution as active participants and not as mere onlookers or consumers.

7. NOTES

(1) Jorge Graciarena, 'Esbozo de interpretación de la crisis actual de la universidad latinoamericana', in G. W. Rama (comp.), Universidad, clases sociales y poder, Caracas, ed. Ateneo de Caracas/CENDES, 1982, p. 35.

(2) See for example, Juan Carlos Portantiero, Estudiantes y política en América Latina. El proceso de la Reforma Universitaria (1918-1938), Mexico City, Siglo XXI, 1978. Also Aldo Solari (comp.), Estudiantes y política en América Latina, Caracas, Monte Avila, 1968.

(3) Some works representative of such currents of thought are, for example, Rudolph P. Atcon, La universidad latinoamericana, Bogotá, ECO, 1966. Darcy Ribeiro, La universidad latinoamericana, Montevideo, CEDAL-Universidad de la República, 1968.

(4) CEPAL, Structure and Dynamics of Development in Latin America and the Caribbean and their Implications for Education, ED-79/MINEDLAC/Ref. 1, 1979.

(5) DEALC Project (Development and Education in Latin America and the Caribbean), Desarrollo y educación en América Latina. Síntesis general, Final Reports/4 Vol. 1, November 1981, p. I.38.

(6) Unesco, Evolución cuantitativa y proyecciones de matrícula de los sistemas educativos de América Latina y el Caribe. Análisis estadístico, ED-79/MINEDLAC/Ref.2, p.56.

(7) DEALCO Project, op. cit.

(8) Ibidem, p. VIII.14.

(9) In this respect see Unesco, op.cit. and also Anthony Layne, 'Educación y Desarrollo para la zona del Caribe'. In: Revista Colombiana de Educación, II Semestre 1980, No. 6. Lawrence Carrington, Education and Development in the English-speaking Caribbean: a Contemporary Survey. Buenos Aires, Unesco/CEPAL/PNUD. Proyecto DEALC/16, October 1978. Donald A. Lemke, Education in the English-Speaking Caribbean, Santiago de Chile, OREALC, 1975.

(10) Ibid., p. VIII.18.

(11) Carlos Filgueira, Expansión educacional y estratificación social en América Latina (1960-1970), Unesco/CEPAL/PNUD, Project 'Desarrollo y Educación en América Latina y el Caribe', DEALC/4, Buenos Aires, 1977, p. 108.

(12) Doris Klubitschko, El origen social de los estudiantes de la universidad de Buenos Aires, Unesco/CEPAL/PNUD, Project DEALC 'Desarrollo y Educación en América Latina y el Caribe', Fichas/9, Buenos Aires, 1980. Doris Klubitschko, El origen social de los estudiantes universitarios. El caso de Venezuela, Unesco/CRESALC, Working Paper, 1980.

(13) DEALC Project, op. cit., p. VIII.32.

(14) Carlos Filgueira and C. Geneletti, Estratificación y movilidad ocupacional en América Latina, Santiago, Cuadernos de la CEPAL, No. 39, 1981.

(15) Idem, p. 129.

(16) DEALCO Project, op.cit., p. VIII.19.

(17) Idem, p. VIII.23.

(18) Idem, p. VIII.22/23.

(19) Idem, p. VIII.23/24.

(20) Heraldo O.R. Laguzzi, Los Centros Regionales Universitarios como instrumentos de desarrollo regional, ICASE, University of Panama, November 1981 (typed).

(21) Unesco, op.cit., p. 62.

(22) Project DEALC, op. cit., p. VIII.44.

(23) Milena Covo, 'Apuntes para un análisis de la trayectoria de una generación universitaria', in C.E.E. Educación y realidad socio-económica, México, 1979.

(24) University of Panama, Plan de Desarrollo Universitario (1983-87), Doc. No.1, Preliminary diagnosis (preparatory version open for consultation and discussion), Panama, November 1982.

(25) La inserción de los universitarios en la estructura ocupacional argentina, Unesco/CEPAL/PNUD, DEALC Project, Fichas/2, Buenos Aires, 1977.

(26) Jorge Graciarena, 'Algunas hipótesis sobre la deserción y el retraso en los estudios universitarios en Uruguay', in Revista Mexicana de Sociología, vol. XXXI, No. 4, October-December 1969.

(27) Unesco, op. cit., p. 74.

(28) Idem, p. 77.

(29) Edgardo Boeninger Kausel, 'Políticas alternativas de financiamiento de la educación superior', en BID, El problema del financiamiento de la educación en América Latina, 1978. See also José A. Pescador, 'La crisis fiscal y el financiamiento de la educación superior en México', in G. Guevara Niebla (comp.), La crisis de la educación superior en México, Mexico City, Nueva Imagen, 1981.

(30) See E. Boeninger Kausel, op. cit.

(31) Daniel Levy, 'Universidad privada y universidad pública: definiciones metodologías y estudios de casos', in I. Lavados Montes, Universidad contemporánea: antecedentes y experiencias internacionales, Santiago, C.P.U., 1980.

(32) Roger L. Geiger, 'Los límites de la educación superior de masas: un análisis comparativo de los factores que afectan los niveles de enrolamientos en Bélgica, Francia y los E.E.U.U.', in I. Lavados Montes, op. cit.

(33) Germán W. Rama, 'Condiciones sociales de la expansión y segmentación de los sistemas universitarios', in G. W. Rama (comp.), op. cit.

(34) Gustavo F. J. Cirigliano 'An example of educational transformation: Venezuela', in Prospects, Unesco, vol. IX, No. 3, 1979. See also Miguel A. Escolet, 'Universidad abierta y pautas para su evaluación', C.E.E., op. cit. Miguel Casas Armengol, La Educación superior a distancia en Venezuela. El caso de la Universidad Nacional Abierta (UNA), Caracas, UNA, March 1981.

(35) Orlando Albornoz, 'Evaluación de innovaciones recientes en la educación superior venezolana', in I. Lavados Montes (comp.), op. cit.

(36) Idem.

(37) Alberto Moreno y Moreno, 'Los sistemas abiertos de ensenañza y su relación con algunos aspectos de la problemática nacional', in G. Guevara Niebla (comp.), op. cit. See also Augusto Moreno Moreno y Cuauhtémoc Valdés Olmedo, Apuntes sobre la educación superior por sistemas abiertos, México, Cuadernos de Planeación Universitaria, UNAM, 1981. Secretaría de Educación Pública. Informe de los sistemas abiertos de educación superior, México, Consejo Coordinador de Sistemas Abiertos, 1981.

(38) See Francisco Antonio Pacheco, 'La Universidad Estatal a Distancia de Costa Rica y la transferencia de tecnología, in Luis M. Peñalver and Miguel A. Escotet. Teoría y praxis de la universidad a distancia. Caracas, FEDES, 1981. This book is a valuable compilation of texts on the issue of the Open University in Latin America.

(39) O. Albornoz, op. cit., p. 302.

(40) Jorge Graciarena, 'Las funciones de la universidad en el desarrollo latinoamericano', in Revista Paraguaya de Sociologia, 8th year, No. 22, 1971.

(41) Regarding the erratic funding of research in the case of Panama, see University of Panama, op. cit. With respect to curriculum, see also Guillermo de la Peña and I. Rosenbluth, 'Posibilidades de una educación paralela', in G. Guevara Niebla, op. cit.

(42) Jorge Katz and R. Cibotti, Marco de referencia para un programa de investigación en temas de ciencia y tecnología en América Latina, BID/CEPAL/BA 10, 1976. Also R. Cibotti and J. Lucangeli, 'El fenómeno tecnológico interno', in Revista de la CEPAL, No. 11, 1980.

(43) Jorge Vivas, 'Marco de referencia para el estudio universidad-empresa en América Latina', in Revista Colombiana de Educación, Bogotá, No. 9, 1er. semestre/82, p. 56.

(44) Doris Klubitschko and Susana Scholnik, Los estudios de postgrado en América Latina: análisis de cuatro casos nacionales, Unesco/CRESALC, Working Paper, 1979.

(45) Pablo Latapí, Algunas tendencias de las universidades latinoamericanas. Problemas seleccionados y perspectivas, Unesco/AIU, 1978.

(46) Enrique Oteiza, 'La evolución del post-grado y la educación superior en América Latina y el Caribe', en Educación Superior, Boletín de CRESALC, No. 8, enero-abril/82. See also Eugenio Méndez, 'Problemas de educación superior; naturaleza y funciones de los programas de post-grado', en C.E.E., op. cit.

(47) A recent survey on post-graduates from the UNAM provides the first quantitative information on these problems. It shows that 54.4 per cent of those surveyed are employed in public research or higher education institutions, whereas only 15.8 per cent were in the non-academic private sector. See S. Malo, J. Garst and G. Garza. El egresado de postgrado de la UNAM. Mexico City, Secretaría Ejecutiva del Consejo de Estudios de Post-grado, 1981.

(48) D. Klubitschko and S. Scholnik, op. cit.

(49) University of Panama, op. cit.

(50) Demerval Saviani, 'A estrutura do ensino na universidade brasileira', in ANDE, 1st year, No. 5, 1982.

(51) Carlos Tunnerman B., 'La investigación en las universidades latinoamericanas', in Universidades, 2nd series, year XV, No. 61, 1975.

(52) Marshall Wolfe, Estilos de desarrollo y educación: un inventario de mitos, recomendaciones y posibilidades, DEALC, Fichas/12, October 1980.

(53) Raúl Prebisch, 'Crítica al capitalismo periférico', in Revista de la CEPAL, No. 1, 1er semestre 1976.

(54) See Ernesto Schiefelbein, La investigación sobre la universidad chilena en 1977-1981, Santiago, FLACSO, 1982.

(55) Juan Carlos Tedesco, Características y necesidades educativas de los niños, jóvenes y adultos en las poblaciones menos favorecidas, Santiago de Chile, OREALC, March 1982.

(56) See, for example, the special issue on Educação e marginalidade na América Latina, Cuadernos de Pesquisa, São Paulo, August 1982, No. 42.

(57) Unesco, Working Paper. Regional Expert Meeting in Latin America and the Caribbean on the role of teachers of educaticnal science in improvement of teacher training at all levels and in improvement of the education system as a whole, ED-82/CONF.627/4, October 1982.

(58) Hanns Albert Steger, 'Aspectos socio-económicos de las perspectivas profesionales en el futuro', in Deslinde UNAM, No. 116, August/79.

(59) See, for example, José Joaquín Brunner, Ideologías universitarias y cambios en la universidad chilena, Santiago, FLACSO, Working Paper No. 117, June 1981. By the same author, Tendencias de cambio en el sistema de educación superior, Chile 1973-1982, Santiago, FLACSO, Working Paper No. 152, July 1982.

(60) See, for example, Project UNDP/Unesco/CINDA, Universidad y sector productivo; politícas y mecanismos de vinculación, Final Report, September 1979.

(61) Juan F. Rada, 'La revolución de la micro-electrónica: efectos en el Tercer Mundo', in Crítica y Utopía, Buenos Aires, No. 7, July 1982.

(62) Juan F. Rada, El impacto de la tecnología microelectrónica y de la información. Estudios de caso en América Latina (reproduced for the first Latin American seminar on the socio-economic impact of micro-electronics in Latin America), Buenos Aires, FLACSO, December 1981.

(63) In this respect, see the articles included in the special issue devoted to information technology and society, in Critíca y Utopía, No. 7, July 1982.